

We claim:

1. A method comprising:

electronically receiving a request from a customer to predict the content level of at least one component in a material, wherein the request includes a near infrared reflectance spectrum of the material;

comparing the spectrum to a database calibration that correlates known content levels of the component in other material to known near infrared reflectance spectra of the other material;

predicting the content level of the component; and

electronically reporting the prediction to the customer.

2. A method as claimed in claim 1, wherein the calibration includes at least one correlation between a known content level of the component determined by *in vivo* measurement and a near infrared reflectance spectra of the material containing that component.

3. A method as claimed in claim 1, wherein the database calibration is specific to the material represented by the spectrum.

4. A method as claimed in claim 1, wherein the material represented by the spectrum is a feedstuff.

5. A method as claimed in claim 1, wherein the material represented by the spectrum is an animal feed.

6. A method as claimed in claim 1, wherein the material represented by the spectrum is cereal, corn, soybean cake, oleoproteinaceous flour, animal meal, animal byproduct, fish meal, cereal byproduct, or silage corn.

7. A method as claimed in claim 1, wherein the material represented by the spectrum is a cosmetic composition, a pharmaceutical composition, or a food article for human consumption.

8. A method as claimed in claim 1, wherein the at least one component whose content level is being predicted is a nutrient.

9. A method as claimed in claim 1, wherein the at least one component whose content level is being predicted is an impurity or toxin.

10. A method as claimed in claim 1, wherein the at least one component whose content level is being predicted is protein, total or digestible amino acids, gross or metabolizable energy, total or retained phosphorous, or silage corn.

11. A method as claimed in claim 1, wherein the at least one component whose content level is being predicted is a digestible nutrient or metabolizable energy.

12. A method as claimed in claim 1, wherein the at least one component whose content level is being predicted is total or digestible methionine, lysine, cystine, threonine, tryptophane, valine, isoleucine, phenylalanine, histidine or arginine.

13. A method as claimed in claim 1, wherein the customer request and prediction report are exchanged on a Web site.

14. A method as claimed in claim 1, wherein the customer request and prediction report are exchanged by electronic mail.

15. A method as claimed in claim 1, which comprises presenting one or more menu options for selection by the customer in making the customer request.

16. A method as claimed in claim 15, which comprises presenting to the customer menu options for the report format of the prediction report.

17. A method as claimed in claim 15, which comprises presenting to the customer menu options for the category of material represented by the spectrum.

18. A method as claimed in claim 15, which comprises presenting to the customer menu options for one or more components whose content level is to be predicted.

19. A method as claimed in claim 1, which comprises charging a fee to the customer for the prediction report.

20. A method as claimed in claim 19, wherein the fee is based on an agreement with the customer to submit a certain minimum number of requests within a certain period of time.

21. A method as claimed in claim 20, wherein the fee is charged on a quarterly basis per year based on an expected number of requests within each quarter.

22. A method as claimed in claim 21, wherein an additional fee during the year is charged for any number of requests greater than that expected during the year.

23. A method as claimed in claim 21, wherein a request does not qualify towards meeting the expected number of requests if a prediction error accompanying the prediction for that request exceeds a threshold value.

24. A method as claimed in claim 21, which comprises discounting fees for individual predictions based on receipt of certain minimum numbers of requests from the customer.

25. A method as claimed in claim 1, which comprises reporting the prediction to the customer within 24 hours of the customer request.

26. A method as claimed in claim 1, which comprises reporting the prediction to the customer within 10 minutes of the customer request.

27. A method as claimed in claim 1, wherein the customer request and the prediction report may be exchanged 24 hours a day.

28. A method as claimed in claim 1, which comprises opening a customer account for the customer upon receipt of a request of the customer.

29. A method as claimed in claim 1, which comprises providing the customer with one or more identity and/or security codes for use by the customer in making a request.

30. A method as claimed in claim 29, which comprises verifying the one or more identity and/or security codes upon receipt of a request.

31. A method as claimed in claim 1, which comprises storing the customer request, fee information, and prediction report of one or more customer requests.

32. A method as claimed in claim 31, wherein the stored information may be retrieved by the customer upon request.

33. A method as claimed in claim 32, wherein the stored information may be retrieved by the customer on a Web site.

34. A prediction report made according to the method of claim 1.

35. A system comprising:

means for electronically receiving a request from a customer to predict the content level of at least one component in a material, wherein the request includes a near infrared reflectance spectrum of the material;

means for comparing the spectrum to a database calibration that correlates known content levels of the component in other material to known near infrared reflectance spectra of the other material;

means for predicting the content level of the component; and

means for electronically reporting the prediction to the customer.

36. A method for obtaining a prediction of the content level of at least one component in a material, which comprises submitting a spectrum and request to the system as claimed in claim 35 and receiving the prediction from the system.

37. A method as claimed in claim 36, wherein the material is a feedstuff or animal feed.

38. A method as claimed in claim 36, wherein the material is cereal, corn, soybean cake, oleoproteinaceous flour, animal meal, animal byproduct, fish meal, cereal byproduct, or silage corn.

39. A method as claimed in claim 36, wherein the at least one component whose content level is being predicted is total or digestible amino acids, gross or metabolizable energy, total or retained phosphorous, silage corn, or toxin.

40. A method for evaluating the stability of a material over time, which comprises obtaining a prediction as claimed in claim 36, obtaining a subsequent prediction as claimed in claim 36 for the material at a later time, and comparing the predictions to evaluate any change in the material.

41. A method comprising:

electronically receiving a request from a customer to predict the content level of at least one component in a material, wherein the request includes a near infrared reflectance spectrum of the material;

comparing the spectrum to a database calibration that correlates known content levels of the component in other material to known near infrared reflectance spectra of the other material;

predicting the content level of the component;

electronically reporting the prediction to the customer; and

charging a fee to the customer for the report,

wherein the spectrum, customer request, and report are exchanged by electronic mail or on a Web site.

42. A method as claimed in claim 41, wherein the material is a feedstuff or animal feed.

43. A method as claimed in claim 41, wherein the material is a pharmaceutical or cosmetic composition.

44. A method as claimed in claim 41, which further comprises storing the customer request and prediction report in a manner that allows the customer to retrieve the stored information on a Web site.

45. A method as claimed in claim 42, wherein the at least one component whose content level is being predicted is a nutrient.

46. A method as claimed in claim 42, wherein the at least one component whose content level is being predicted is a toxin.

47. A method as claimed in claim 41, wherein the fee is based on an agreement with the customer to submit a certain minimum number of requests within a period of three years.



48. A method as claimed in claim 47, wherein the fee is charged on a quarterly basis per year based on an expected number of requests within each quarter.

49. A method as claimed in claim 48, wherein a request does not qualify towards meeting the expected number of requests if a prediction error accompanying the prediction for that request exceeds a threshold value.

50. A method as claimed in claim 49, which comprises discounting fees for individual predictions based on receipt of certain minimum numbers of requests from the customer.

51. A method comprising:  
electronically sending a request to predict the content level of at least one component in a material, wherein the request includes a near infrared reflectance spectrum of the material; and

electronically receiving the prediction of the content level of the component, wherein the prediction was made by comparing the spectrum to a database calibration that correlates known content levels of the component in other material to known near infrared reflectance spectra of the other material.

52. A method as claimed in claim 51, which further comprises paying a fee for the prediction.

53. A method as claimed in claim 52, wherein the fee is based on an agreement to submit a certain minimum number of requests within a period of three years.

54. A method as claimed in claim 53, wherein the fee is charged on a quarterly basis per year based on an expected number of requests within each quarter.

55. A method as claimed in claim 54, wherein a request does not qualify towards meeting the expected number of requests if a prediction error accompanying the prediction for that request exceeds a threshold value.

56. A method as claimed in claim 55, which comprises discounting fees for individual predictions based on receipt of certain minimum numbers of requests from the customer.

57. A method as claimed in claim 51, wherein the material is a feedstuff or animal feed.

58. A method as claimed in claim 51, wherein the material is a pharmaceutical or cosmetic composition.

59. A system comprising:

means for electronically receiving a request from a customer to predict the content level of at least one component in a material, wherein the request includes a near infrared reflectance spectrum of the material;

means for predicting the content level of the component upon analysis of the near infrared reflectance spectrum of the material;

means for electronically reporting the prediction to the customer; and

means for charging the customer a fee for the prediction.

60. A method comprising:

electronically receiving a request from a customer to predict the content level of at least one component in a material, wherein the request includes a near infrared reflectance spectrum of the material;

predicting the content level of the component upon analysis of the near infrared reflectance spectrum of the material;

electronically reporting the prediction to the customer; and

charging the customer a fee for the prediction.

61. A method as claimed in claim 60, wherein the fee is based on an agreement to submit a certain minimum number of requests within a period of three years.

62. A method as claimed in claim 61, wherein the fee is charged on a quarterly basis per year based on an expected number of requests within each quarter.

